



## VA 525 - Compact inline flow sensor for air and nitrogen

No inlet section necessary – integrated flow straightener – optional pressure sensor

The newly developed VA 525 combines modern digital interfaces for connection to an energy monitoring system with a small, compact design. The VA 525 is always used when many machines (compressed air consumers) are to be integrated into an energy monitoring network.



Readout values in the display can be rotated by 180°, e.g. for overhead installation

### Display shows 2 values at the same time:

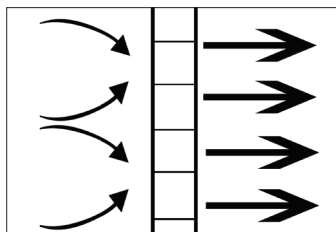
- Present flow in m<sup>3</sup>/h, l/min,...
- Total consumption (counter reading) in m<sup>3</sup>, l, kg
- Temperature measurement
- **Optional:** Pressure measurement

### Advantages at a glance:

- Compact, small design - for use in machines, behind maintenance unit on the end user
- Optionally with conventional analogue signals (4...20 mA and pulse) or digital interfaces such as Modbus-RTU, Ethernet (also PoE), M-Bus
- All interfaces are freely programmable via the display

### Screw-in thread:

Easy installation into the existing pipe due to integrated measuring section (suitable for 1/4", 1/2", 3/4", 1", 1 1/4", 1 1/2" or 2" lines)

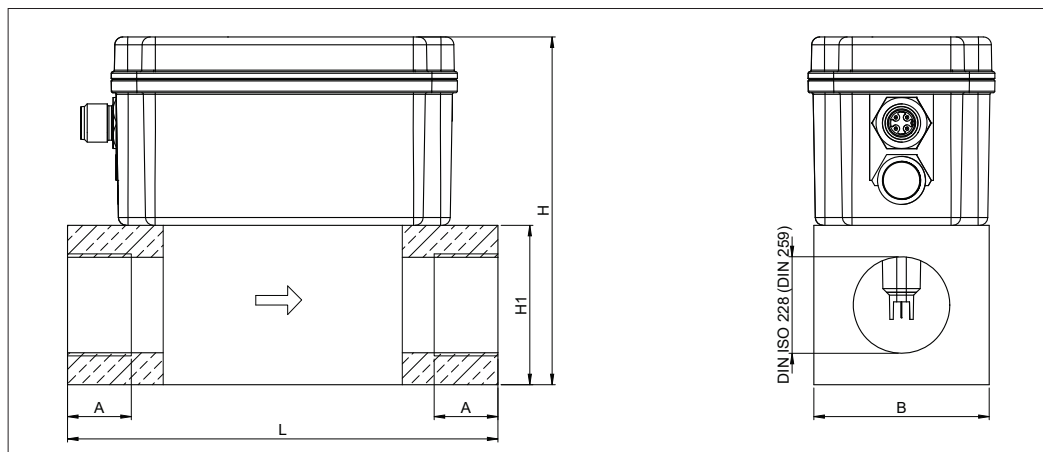


Integrated flow straightener - no inlet section necessary



### With a key stroke:

- Reset counter reading
- Select units
- Parameterise interfaces



**Flow measuring ranges VA 525 (max version 185 m/s) for compressed air (ISO 1217:1000 mbar, 20 °C)** Measuring ranges for other types of gas see pages 138 to 141

| Measuring section | Thread   | Measuring range full scales |     | L   | B  | H1 | H     | A  |
|-------------------|----------|-----------------------------|-----|-----|----|----|-------|----|
|                   |          | m <sup>3</sup> /h           | cfm |     |    |    |       |    |
| DN 8              | G 1/4"   | 105 l/min                   | 3.6 | 135 | 55 | 50 | 109.1 | 15 |
| DN 15             | G 1/2"   | 90 m <sup>3</sup> /h        | 50  | 135 | 55 | 50 | 109.1 | 20 |
| DN 20             | G 3/4"   | 170 m <sup>3</sup> /h       | 100 | 135 | 55 | 50 | 109.1 | 20 |
| DN 25             | G 1"     | 290 m <sup>3</sup> /h       | 170 | 135 | 55 | 50 | 109.1 | 25 |
| DN 32             | G 1 1/4" | 530 m <sup>3</sup> /h       | 310 | 135 | 80 | 80 | 139.1 | 25 |
| DN 40             | G 1 1/2" | 730 m <sup>3</sup> /h       | 430 | 135 | 80 | 80 | 139.1 | 25 |
| DN 50             | G 2"     | 1195 m <sup>3</sup> /h      | 700 | 135 | 80 | 80 | 139.1 | 30 |



Example order code VA 525:

0695 5250\_A1\_B1\_C1\_D1\_E1\_F1\_G1\_H1\_I1\_J1\_K1\_L1\_M1\_R1

| Measuring section                     |                                                                                                                    |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| A1                                    | 1/4"                                                                                                               |
| A2                                    | 1/2"                                                                                                               |
| A3                                    | 3/4"                                                                                                               |
| A4                                    | 1"                                                                                                                 |
| A5                                    | 1 1/4"                                                                                                             |
| A6                                    | 1 1/2"                                                                                                             |
| A7                                    | 2"                                                                                                                 |
| Threaded version                      |                                                                                                                    |
| B1                                    | G female thread                                                                                                    |
| B2                                    | NPT female thread                                                                                                  |
| Material type                         |                                                                                                                    |
| C1                                    | Aluminium                                                                                                          |
| Adjustment/calibration                |                                                                                                                    |
| D1                                    | No real gas adjustment - gas type configuration per gas constant                                                   |
| D2                                    | Real gas adjustment in the gas type selected below                                                                 |
| Gas type                              |                                                                                                                    |
| E1                                    | Compressed air                                                                                                     |
| E2                                    | Nitrogen (N2)                                                                                                      |
| Measuring range (see table)           |                                                                                                                    |
| F1                                    | Low-speed version (50 m/s)                                                                                         |
| F2                                    | Standard version (92,7 m/s)                                                                                        |
| F3                                    | Max version (185 m/s)                                                                                              |
| F4                                    | High-speed version (224 m/s)                                                                                       |
| Reference standard                    |                                                                                                                    |
| G1                                    | 20 °C, 1000 mbar                                                                                                   |
| G2                                    | 0 °C, 1013.25 mbar                                                                                                 |
| G3                                    | 15 °C, 981 mbar                                                                                                    |
| G4                                    | 15 °C, 1013.25 mbar                                                                                                |
| Display option                        |                                                                                                                    |
| H1                                    | With integrated display                                                                                            |
| H2                                    | Without display                                                                                                    |
| Pressure measurement option           |                                                                                                                    |
| I1                                    | Without pressure sensor                                                                                            |
| I2                                    | With integrated pressure sensor 0...16 bar (output only via digital interfaces)                                    |
| I3                                    | With integrated pressure sensor 10...2000 mbar (abs), for vacuum applications (output only via digital interfaces) |
| Signal output / bus connection option |                                                                                                                    |
| J1                                    | 1x 4...20 mA analogue output for present flow and pulse output                                                     |
| J2                                    | Modbus-RTU (RS485)                                                                                                 |
| J3                                    | Ethernet interface (Modbus/TCP)                                                                                    |
| J4                                    | Ethernet interface Power over Ethernet (Modbus/TCP)                                                                |
| J5                                    | M-Bus                                                                                                              |
| Rectifier                             |                                                                                                                    |
| K1                                    | With integrated flow straightener, no additional inlet section necessary (with measuring section 1/2" to 2")       |
| K2                                    | Without rectifier (for measuring section 1/4")                                                                     |

| Accuracy class          |                                                             |
|-------------------------|-------------------------------------------------------------|
| L1                      | ± 1.5% of m.v. ± 0.3% of f.s.                               |
| L2                      | ± 6% of m.v. ± 0.5% of f.s.                                 |
| L3                      | ± 1% of m.v. ± 0.3% of f.s.                                 |
| Maximum pressure        |                                                             |
| M1                      | 16 bar                                                      |
| Surface condition       |                                                             |
| N1                      | Standard version                                            |
| Special measuring range |                                                             |
| R1                      | Special measuring range (please specify when placing order) |

Order no. VA 525

| DESCRIPTION               | ORDER NO.                      |
|---------------------------|--------------------------------|
| Compact inline flow meter | 0695 5250 + Order code A_...R_ |

| TECHNICAL DATA VA 525                                                            |                                                                                                                                                              |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Parameters:</b>                                                               | m³/h, l/min (1000 mbar, 20 °C) in case of compressed air or Nm³/h, NI/min (1013 mbar, 0 °C) in case of gases                                                 |
| <b>Units adjustable via keys at display:</b>                                     | m³/h, m³/min, l/min, l/s, ft/min, cfm, m/s, kg/h, kg/min, g/s, lb/min, lb/h                                                                                  |
| <b>Sensor:</b>                                                                   | Thermal mass flow sensor                                                                                                                                     |
| <b>Measured medium:</b>                                                          | Air                                                                                                                                                          |
| <b>Measuring range:</b>                                                          | See table above                                                                                                                                              |
| <b>Accuracy:</b><br>(o. M. V. = of measured value)<br>(o. F. S. = of full scale) | ± 1.5% of m.v. ± 0.3 % of f.s.<br>on request:<br>± 1% of m.v. ± 0.3% of f.s. or ± 6% of m.v. ± 0.5% of f.s.                                                  |
| <b>Pressure measurement:</b>                                                     | 0...16 bar, accuracy: 1%, or 10...2000 mbar (abs)                                                                                                            |
| <b>Operating temperature:</b>                                                    | -20...60 °C                                                                                                                                                  |
| <b>Operating pressure:</b>                                                       | Up to 16 bar                                                                                                                                                 |
| <b>Digital output:</b>                                                           | RS 485 interface, (Modbus-RTU), M-Bus (optional) Ethernet interface or PoE                                                                                   |
| <b>Analogue output:</b>                                                          | 4...20 mA for m³/h or l/min                                                                                                                                  |
| <b>Pulse output:</b>                                                             | 1 pulse per m³ or per litre electrically isolated. Pulse weight can be set on the display.<br>Alternatively, the pulse output can be used as an alarm relay. |
| <b>Supply:</b>                                                                   | 18...36 VDC, 5 W                                                                                                                                             |
| <b>Burden:</b>                                                                   | < 500 Ω                                                                                                                                                      |
| <b>Housing:</b>                                                                  | Polycarbonate (IP 65)                                                                                                                                        |
| <b>Measuring section:</b>                                                        | Aluminium                                                                                                                                                    |
| <b>Connection thread of measuring sections:</b>                                  | G 1/4" to G 2" (BSP British Standard Piping) or 1/2" to 2" NPT thread                                                                                        |
| <b>Mounting position:</b>                                                        | any                                                                                                                                                          |



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